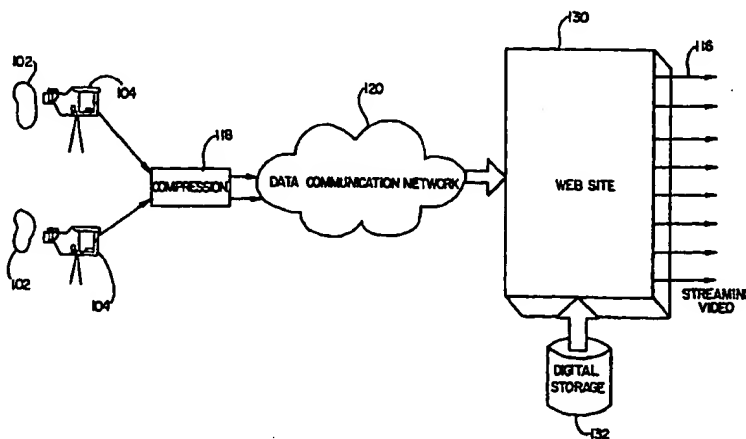


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## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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<b>(21) International Application Number:</b> PCT/US98/18271 <b>(22) International Filing Date:</b> 3 September 1998 (03.09.98) <b>(30) Priority Data:</b> 08/923,091 4 September 1997 (04.09.97) US <b>(71) Applicant:</b> DISCOVERY COMMUNICATIONS, INC. [US/US]; 7700 Wisconsin Avenue, Bethesda, MD 20814-3522 (US). <b>(72) Inventors:</b> HENDRICKS, John, S.; 8723 Persimmon Tree Road, Potomac, MD 20854 (US). McCOSKEY, John, S.; 5925 Serenity Lane, Derwood, MD 20855 (US). AS- MUSSEN, Michael; 2627 Meadow Hall Drive, Herndon, VA 20171 (US). <b>(74) Agents:</b> NOTO, Aldo; Dorsey & Whitney LLP, Suite 200, 1330 Connecticut Avenue N.W., Washington, DC 20036 (US) et al.		<b>(81) Designated States:</b> AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>With international search report.</i> <i>With amended claims and statement.</i>  <b>Date of publication of the amended claims and statement:</b> 3 June 1999 (03.06.99)

**(54) Title:** APPARATUS FOR VIDEO ACCESS AND CONTROL OVER COMPUTER NETWORK, INCLUDING IMAGE CORRECTION

**(57) Abstract**

The present invention relates to a method and apparatus for communicating multiple live video feeds over the internet. Users may be able to view a plurality of remote locations (102) in real time. In another embodiment of the invention, users are able to remotely control a video picture of a distant location. The remote control may be either actual control of a remote video camera or perceived remote control by the manipulation of audiovisual data streams. In one embodiment, text, graphics, and other video information supplement one or more video pictures to provide an educational and entertaining system. In accordance with the present invention, information is accessible to users who are viewing multiple video pictures. The information relates and describes what is being viewed. Users who have different types of equipment, with different data rates, are able to access and use the system of the present invention. In another embodiment, users may interactively communicate with a video lecturer by asking questions and receiving answers. The invention may be connected to, and in communication with, broadcast and/or cable television systems.

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## AMENDED CLAIMS

[received by the International Bureau on 11 March 1999 (11.03.99);  
original claim 1, 7, 11, 12, 33 and 52 amended; remaining claims unchanged (6 pages)]

1. An apparatus for communicating audio and video signals to user terminals, the apparatus comprising:

a web site, connected to a plurality of user terminals, comprising:

a means for receiving digitally compressed audio and video;

an audio-video server for providing a plurality of digital video signals;

a means for switching and combining the plurality of digital video signals;

means for receiving commands from users at the user terminals, the commands directing the web site to provide desired digital audio and video signals;

an administrative unit, connected to the means for switching and combining, which directs which signals are switched and combined; and

a means, connected to the switching and combining means, for communicating the desired digital audio and video signals to the user terminals as video streams.

2. The apparatus of claim 1, wherein the web site further comprises:

an audio and video storage device, connected to the receiving means, which stores at least some received audio and video;

a data storage device, connected to the receiving means, which stores textual and graphical data;

a database server, connected to the administrative unit, the switching means, the audio and video storage device and the data storage device;

wherein the administrative means directs the database server to retrieve and supply to the switching means the audio and video information from the audio and

a display, connected to a data communication network, which shows questions from a question signal received over the data communication network;

a data communication network, connected to a web site and to the compressor and display, which carries the compressed video signals from the compressor to the web site and which carries the question signal from the web site to the display;

the web site, connected to the data communication network and to user terminals, the web site comprising:

a receiver, which receives the compressed video signal;

communication equipment, for transmitting the received video signal to a user terminal and for receiving a user question;

an administrative unit, in operative communication with the communication equipment, which processes the user question into a question signal and passes the question signal to a transmitter; and

a transmitter, connected to the data communication network, which transmits the question signal to the remote computer; and

wherein a user is able to ask the remote instructor a question by entering a user question at the user terminal, and wherein the remote instructor is able to view the user question on the display and answer the user question.

7. A system for providing a user with perceived camera control via a web site, comprising:

communications equipment to receive camera control commands from one or more connected users and to transmit video to the one or more connected users;

video of different views of a remote site;

an administrative unit, wherein the administrative unit determines which view of the remote site to transmit to a connected user in response to a received camera control command, from the connected user thereby providing the connected user with the perception of camera control.

8. The system of claim 7, wherein the system further comprises a video storage unit, wherein the video storage unit supplies video of different views of the remote site to the web system.

9. The system of claim 8, wherein the video of different views of the remote site is video of different camera angles of the remote site.

10. The system of claim 8, wherein the video of different views of the remote site is a distorted wide angle video of the remote site, and wherein the system further comprises a means for removing distortion from at least one view of the wide angle video.

11. A system for providing a user with actual camera control, the system comprising:

a web site, comprising:

communications equipment to receive camera control commands from one or more connected users and to transmit video to the one or more connected users;

a video receiver for receiving video from a remote video camera;

a compression unit that provides compressed video;

a transmitter in communication with the remote video camera;

a camera control unit, which outputs formatted camera control commands to the transmitter; and

wherein the camera control commands received from a user are formatted and transmitted to the remote camera and control the remote camera.

12. A system for obtaining and communicating video, comprising:

a means for obtaining video;

a first matrix switch, in operative communication with the obtaining means, which switches the obtained video;

means for receiving a command from a remote user, the command directing the system to provide a desired one of the obtained video to the remote user;

an output device, in operative communication with the first matrix switch, which outputs the desired switched video;

wherein users receive the video from the output device.

13. The system of claim 12, wherein the means for obtaining includes a receiver which receives video.

14. The system of claim 13, wherein the means for obtaining further includes a video compressor.

30. The system of claim 12, wherein the output device comprises an output interface, the output interface connected to a network manager.
31. The system of claim 12, wherein the output device comprises an output interface, the output interface connected to a set top terminal.
32. The system of claim 12, wherein the output device comprises an output interface, the output interface connected to a cable television system.
33. A method of remotely viewing a remote site, the method comprising the steps of:
- accessing a communications network;
  - receiving video depicting one or more views of the remote site via the communications network;
  - receiving commands from a remote user regarding a different view of the remote site;
  - entering the commands regarding [a] the different view of the remote site;
  - and
  - displaying the different view of the remote site to the remote user.
34. The method of claim 33, wherein the communications network is the internet, and further comprising the steps of:
- addressing a web site on the internet;
  - selecting a remote site.
35. The method of claim 33, wherein the received video is distorted wide angle video, and wherein the step of displaying comprises the step of removing distortion

52. A method of providing interactive presentations to users, comprising the steps of:

connecting to at least one user via a communications media;  
obtaining compressed video of a plurality of remote sites for communication to the user;  
receiving a request from the user concerning video at a single remote site;  
communicating, via the communications media, at least part of the video concerning the requested remote site to the user.

53. The method of claim 52, wherein the step of communicating comprises the step of compressing video concerning the requested remote site.

54. The method of claim 52, wherein the step of obtaining video comprises the step of retrieving the video from a video storage device.

55. The method of claim 52, wherein the step of obtaining video comprises the step of receiving the video from a communications media.

56. The method of claim 52, further comprising the steps of:  
retrieving data concerning the requested remote site;  
retrieving graphics concerning requested remote site; and  
wherein the step of communicating further comprises the step of providing the retrieved data and graphics to the user.



**STATEMENT UNDER ARTICLE 19**

U.S. Patent 5,537,141 to Harper, et al., (hereafter Harper) discloses a distance teaching system in which an instructor provides a video feed and one of a plurality of audio feeds to students located at remote sites. However, the students located at the remote sites do not have the ability to command display of a desired digital audio or video signal. Accordingly, Harper does not disclose all the features in claim 1. Therefore, claim 1 defines patentable subject matter.

In contrast, claim 1 is amended to recite "means for receiving commands from users at the user terminals, the commands directing the web site to provide desired digital audio and video signals." Similarly, claim 7 recites "an administrative unit, wherein the administrative unit determines which view of the remote site to transmit to a connected user in response to a received camera control command from the connected user." Claim 12 recites "means for receiving a command from a remote user, the command directing the system to provide a desired one of the obtained video to the remote user." Claim 33 recites the step of "receiving commands from a remote user regarding a different view of the remote cite; entering commands regarding a different view of the remote site; and displaying the different view of the remote site to the remote user." Accordingly, Harper does not disclose or suggest all the features recited in claims 1, 7, 12, and 33. Therefore, claims 1, 7, 12 and 33 recite patentable subject matter.

U.S. Patent 5,517,236 to Sergeant, et al., (hereafter Sergeant) is directed to a video surveillance system. Sergeant does not disclose or suggest video compression. In contrast, claim 1 recites means for receiving digitally compressed audio and video. Therefore, Sergeant does not

disclose or suggest all the features recited in claim 1. Accordingly, claim 1 defines patentable subject matter.

U.S. Patent 5,729,471 to Jain, et al., (hereafter Jain) is directed to a multiple interactive video system in which viewers can select to view a composite video from one or more perspectives. However, Jain does not disclose or suggest use of digital video compression to construct the composite video.

In contrast, claim 1 recites means for receiving digitally compressed audio and video. Similarly, claims 5, 7, 11, 12, 33 and 52 all recite compressed video. Claim 68 recites receiving questions from users and acquiring the lecture's response to one or more questions. Jain does not disclose or suggest this feature.

In view of the above, Jain does not disclose all the features in claims 1, 5, 7, 11, 12, 33, 52 and 68. Therefore, claims 1, 5, 7, 11, 12, 33, 52 and 68 define patentable subject matter.

Please call the undersigned if there are any other questions or problems. Please charge Deposit Account 04-1425 for any fees required by this letter. A duplicate copy of this letter is enclosed for this purpose.